The Grass IS Greener in El Dorado Hills' Serrano Development

By Nancy King

One of the strategies of the 2002 Recycled Water Task Force is to look at previous endeavors that have made water recycling successful in California. Since the early 1900s, California has a history of many successful recycled water applications with agricultural and landscape irrigation. One recent endeavor is the acclaimed northern California's Serrano Recycled Water project located in El Dorado Hills, El Dorado County. Serrano is most notable for being a master-planned golf course community covering 3,500 acres in the rolling Sierra foothills. However, the development owes its ongoing growth to the identification of recycled water as the main water supply for irrigation. This identification made it possible for the Serrano development to continue as planned.

In 1989, the El Dorado Irrigation District (EID) declared a water emergency because limited water supplies of the district could cause future rationing and water shortages. In 1990, the developers, Serrano Associates LLC, approached the district with their plan to incorporate recycled water capability into the community's infrastructure. They proposed to fund and to construct tertiary treatment, filtration, disinfection, and pumping facilities at the Deer Creek Wastewater Treatment Plant. The developers also included a distribution system, which consists of the installation of purple pipes, distinguishing recycled water from drinking water pipes, to deliver recycled water from the El Dorado Irrigation District's Deer Creek Wastewater Treatment Plant.

In 1991 when recycled water was identified as a water supply for irrigation, the Serrano development of a golf course and subdivisions moved forward. The original purpose of the project was to allow the developer to irrigate common area landscapes such as golf courses, greenbelts, parks and playing fields. These common areas were brought online with recycled water in 1996. Now since 1999, a total of 1,000 residential lots have been developed with the recycled water infrastructure in place. These homeowners can now reap the benefits of the less expensive digested, filtered, and disinfected recycled water to irrigate their private front and back yards. Serrano has a total of 3,500 residential lots slated for de-velopment with the recycled water infrastructure. Using recycled water for irrigation preserves drinking water and environmental water for their intended purpose.

Serrano's innovative project provides recycled water in a reliable, practical manner that provides the best use of water resources, while protecting public health and the environment. The project's master plan emphasizes the optimization of recycled water from EID's two wastewater treatment plants: El Dorado Hills (3.0 MGD), and Deer Creek (3.6 MGD). The Serrano project not only minimizes wastewater discharge to the environment, it maximizes reuse opportunities while increasing the availability of drinking water supplies.

Recycled water is processed from water discharged into the wastewater collection system. The water is treated to remove impurities and sediments, and disinfected. This level of treatment is called tertiary and is close to meeting the state and federal drinking water standards. To meet the regulatory requirements, the Regional Water Quality Control Board and the State Department of Health Services monitor this water. After treating the water to this standard, the majority of municipalities discharge the water into the river system. Then downstream another city picks up the water, treats it to the final level, and distributes it for drinking water purposes.

However, in the El Dorado Hills development, the water is recycled instead of discharged into the stream. Homeowners use the recycled water by installing the recycled water irrigation system. To distinguish the recycled water from drinking water the Health and Safety Code mandates the use of purple pipes, which can be purchased in certain home improvement stores. Homeowners receive a manual to correctly and safely install the system. After completion, an inspector checks the construction and performs a cross connection test to assure the drinking and recycled water systems are not connected. With a correctly installed system, the recycled and drinking water lines are not connected. Furthermore, an extra safety factor is provided through a backflow prevention mechanism installed on the drinking water meter during the Serrano homes' construction. If a connection of the drinking and recycled water system were to occur, this device would prevent recycled water from flowing into the drinking water pipes.

The treatment facilities produce high quality recycled water meeting unrestricted use via Title 22 standards. Although close to drinking water standards, the recycled water in the Serrano development is not intended to drink and is not to be used in swimming pools. The homeowner sees the benefits in cost reductions, as the recycled water is less expensive than drinking water. Another benefit for these homeowners during drought years is that they, as recycled water users, may have fewer restrictions placed on their landscape water needs than their non-water recycling neighbors. Thus, recycled water helps the flowers to bloom and grass to grow greener in El Dorado Hills.

For further information about the project, contact Jill Shannon at (916) 939-3333, e-mail jshannon@parkerdevco.com, or Nancy King at (916) 651-7200, e-mail king@water.ca.gov.